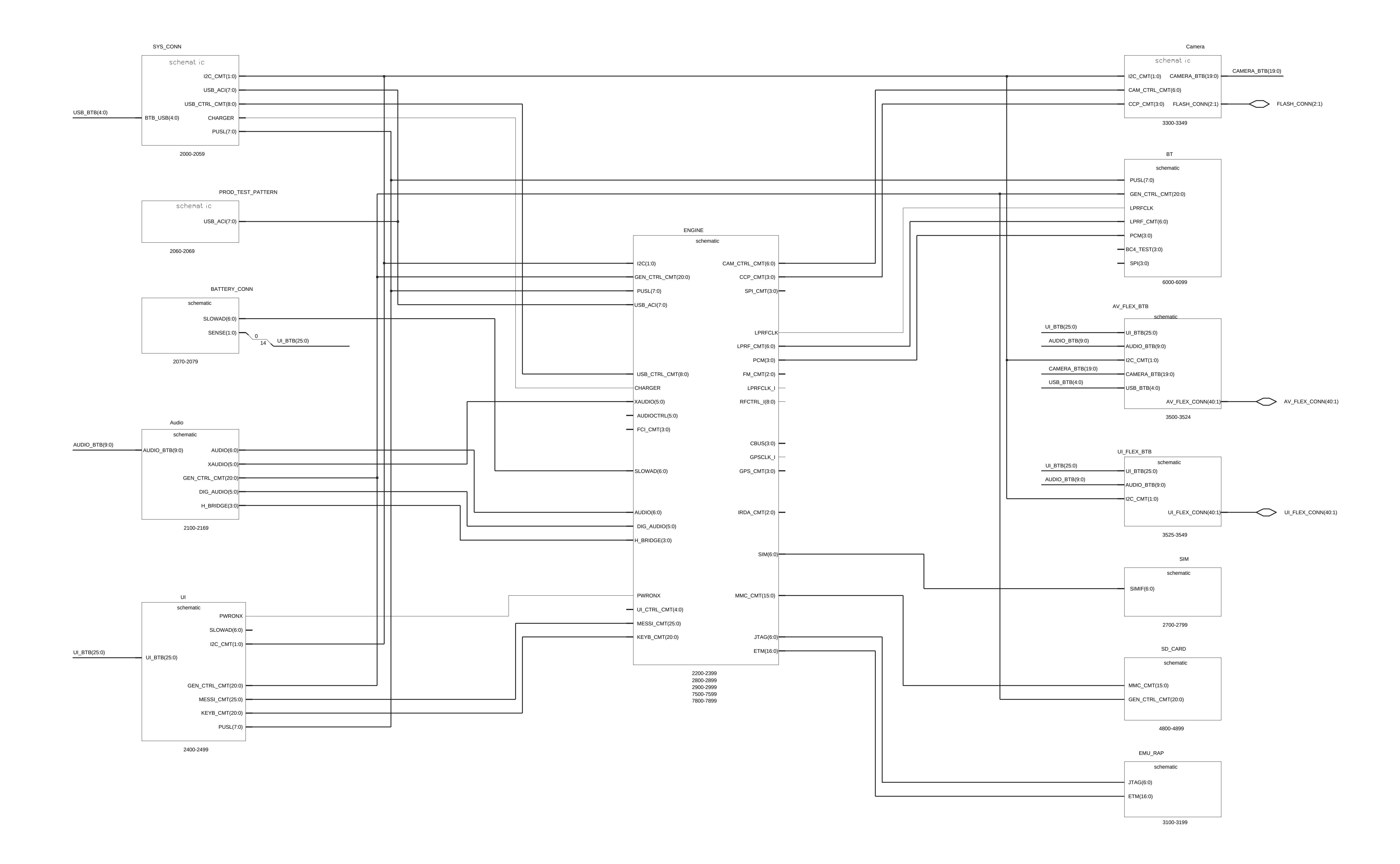
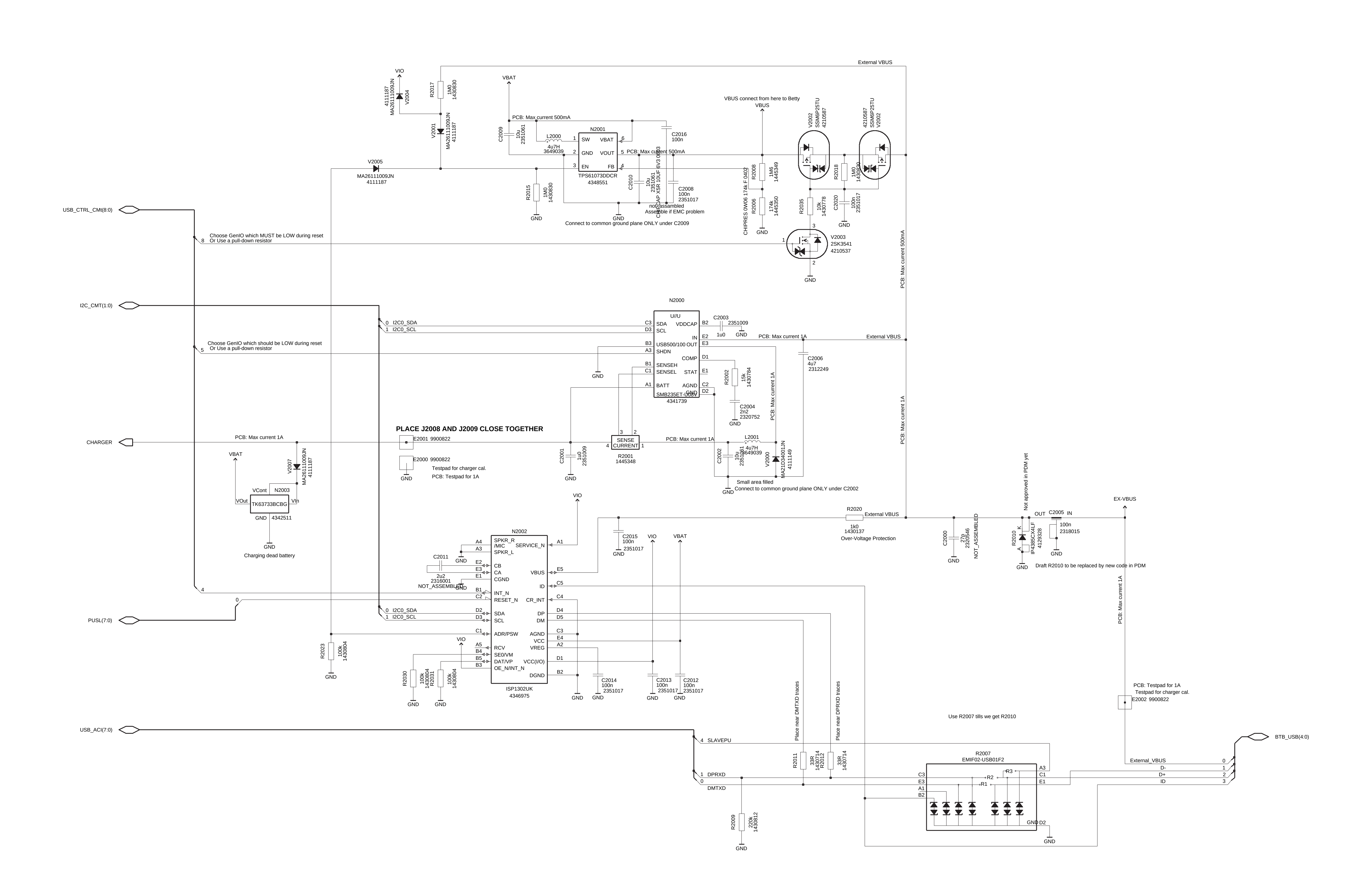
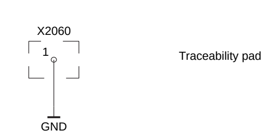
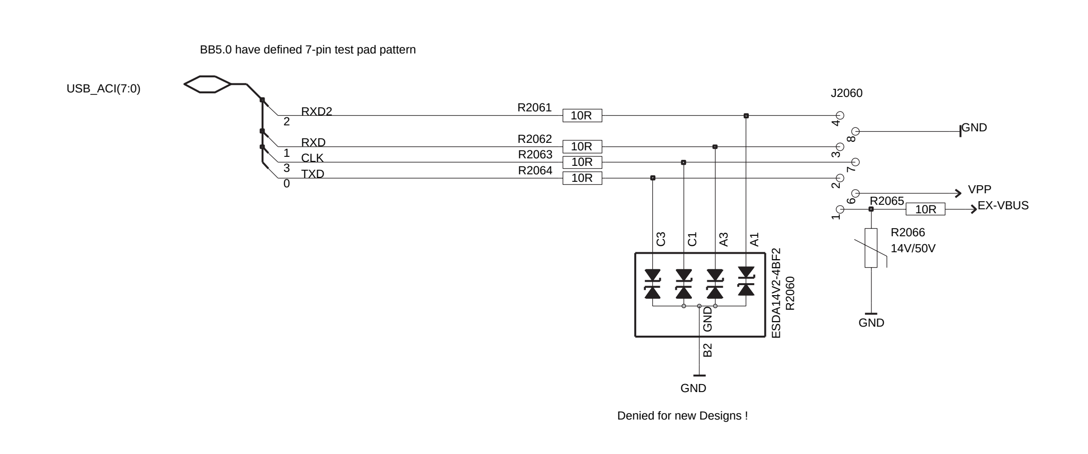

SYS_CONN
schematic
I2C_CMT(1:0)
USB_ACI(7:0)
USB_CTRL_CMT(8:0)
USB_BTB(4:0)
BTB_USB(4:0)
CHARGER
PUSL(7:0)
2000-2059
PROD_TEST_PATTERN
schematic
USB_ACI(7:0)
2060-2069
BATTERY_CONN
schematic
SLOWAD(6:0)
SENSE(1:0)
0
14
UI_BTB(25:0)
2070-2079
Audio
schematic
AUDIO_BTB(9:0)
AUDIO_BTB(9:0)
AUDIO(6:0)
XAUDIO(5:0)
GEN_CTRL_CMT(20:0)
DIG_AUDIO(5:0)
H_BRIDGE(3:0)
2100-2169
UI
schematic
PWRONX
SLOWAD(6:0)
I2C_CMT(1:0)
UI_BTB(25:0)
UI_BTB(25:0)
GEN_CTRL_CMT(20:0)
MESSI_CMT(25:0)
KEYB_CMT(20:0)
PUSL(7:0)
2400-2499
ENGINE
schematic
I2C(1:0)
GEN_CTRL_CMT(20:0)
PUSL(7:0)
USB_ACI(7:0)
USB_CTRL_CMT(8:0)
CHARGER
XAUDIO(5:0)
AUDIOCTRL(5:0)
FCI_CMT(3:0)
SLOWAD(6:0)
AUDIO(6:0)
DIG_AUDIO(5:0)
H_BRIDGE(3:0)
PWRONX
UI_CTRL_CMT(4:0)
MESSI_CMT(25:0)
KEYB_CMT(20:0)
CAM_CTRL_CMT(6:0)
CCP_CMT(3:0)
SPI_CMT(3:0)
LPRFCLK
LPRF_CMT(6:0)
PCM(3:0)
FM_CMT(2:0)
LPRFCLK_I
RFCTRL_I(8:0)
CBUS(3:0)
GPSCLK_I
GPS_CMT(3:0)
IRDA_CMT(2:0)
SIM(6:0)
MMC_CMT(15:0)
JTAG(6:0)
ETM(16:0)
2200-2399
2800-2899
2900-2999
7500-7599
7800-7899
Camera
schematic
I2C_CMT(1:0)
CAMERA_BTB(19:0)
CAMERA_BTB(19:0)
CAM_CTRL_CMT(6:0)
CCP_CMT(3:0)
FLASH_CONN(2:1)
FLASH_CONN(2:1)
3300-3349
BT
schematic
PUSL(7:0)
GEN_CTRL_CMT(20:0)
LPRFCLK
LPRF_CMT(6:0)
PCM(3:0)
BC4_TEST(3:0)
SPI(3:0)
6000-6099
AV_FLEX_BTB
schematic
UI_BTB(25:0)
UI_BTB(25:0)
AUDIO_BTB(9:0)
AUDIO_BTB(9:0)
I2C_CMT(1:0)
CAMERA_BTB(19:0)
CAMERA_BTB(19:0)
USB_BTB(4:0)
USB_BTB(4:0)
AV_FLEX_CONN(40:1)
AV_FLEX_CONN(40:1)
3500-3524
UI_FLEX_BTB
schematic
UI_BTB(25:0)
UI_BTB(25:0)
AUDIO_BTB(9:0)
AUDIO_BTB(9:0)
I2C_CMT(1:0)
UI_FLEX_CONN(40:1)
UI_FLEX_CONN(40:1)
3525-3549
SIM
schematic
SIMIF(6:0)
2700-2799
SD_CARD
schematic
MMC_CMT(15:0)
GEN_CTRL_CMT(20:0)
4800-4899
EMU_RAP
schematic
JTAG(6:0)
ETM(16:0)
3100-3199

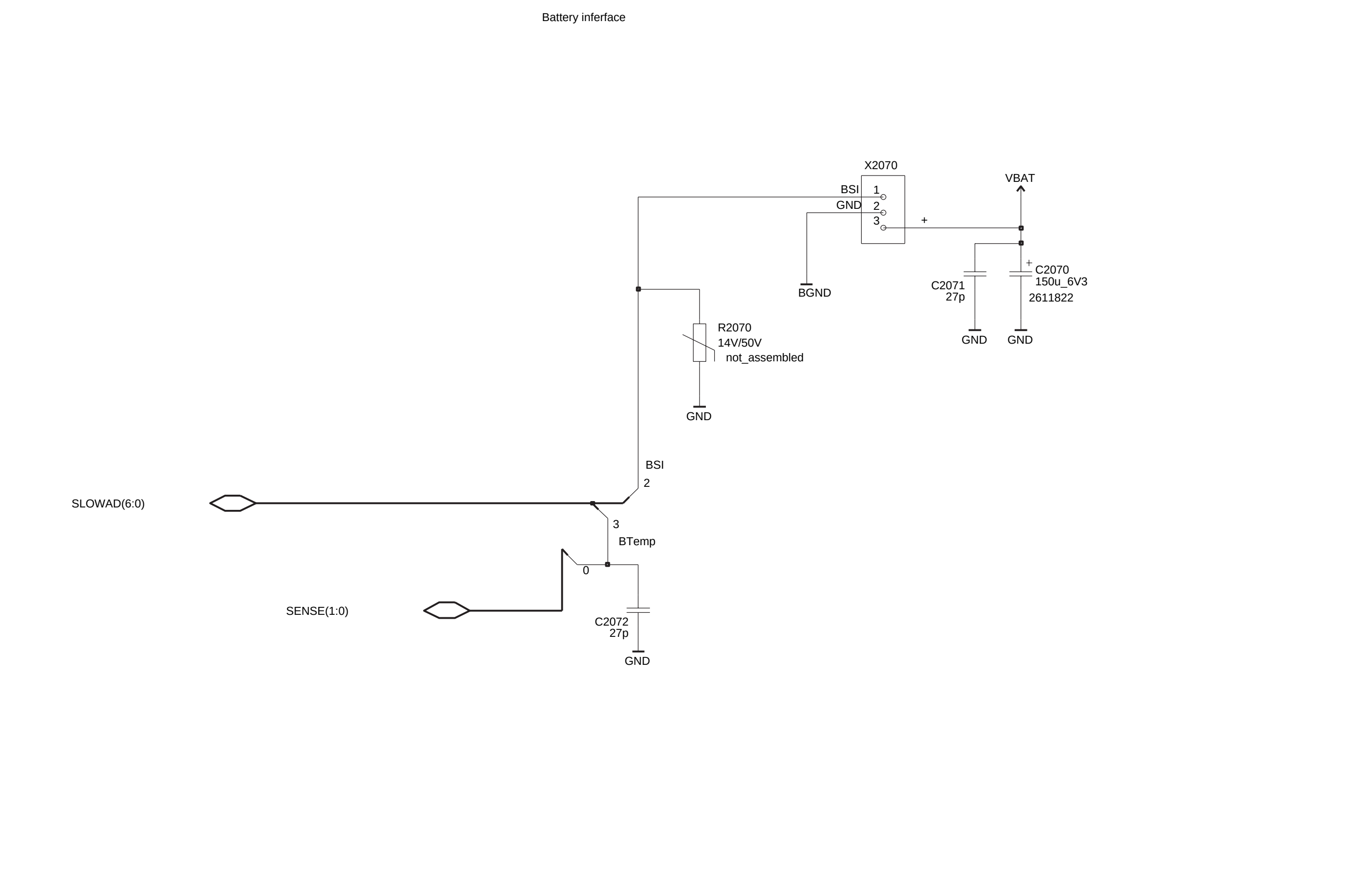


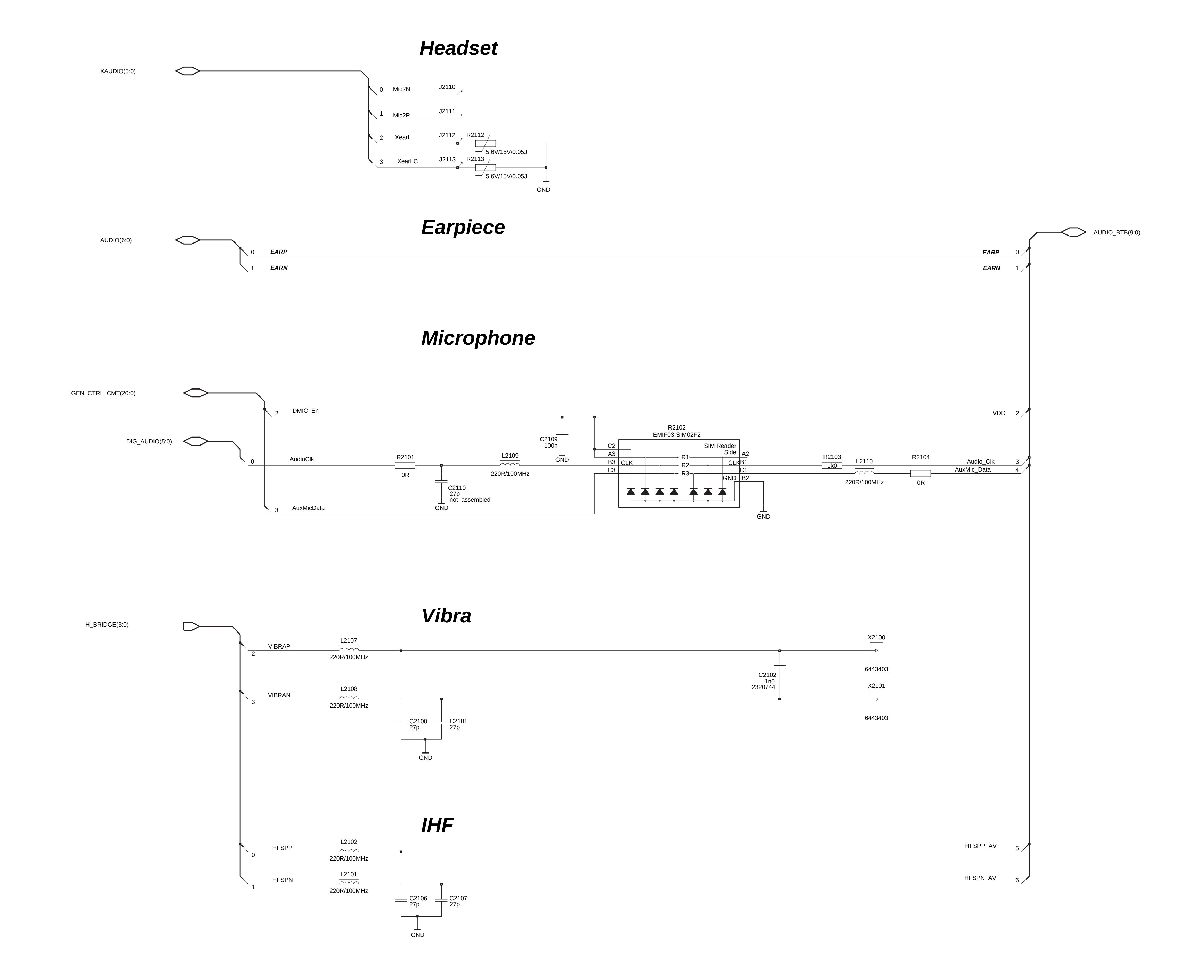
External VBUS
VBUS connect from here to Betty
PCB: Max current 500mA
Connect to common ground plane ONLY under C2009
Choose GenIO which MUST be LOW during reset
Or Use a pull-down resistor
Choose GenIO which should be LOW during reset
Or Use a pull-down resistor
PLACE J2008 AND J2009 CLOSE TOGETHER
PCB: Max current 1A
Testpad for charger cal.
PCB: Testpad for 1A
Charging dead battery
Small area filled
Connect to common ground plane ONLY under C2002
Over-Voltage Protection
Not approved in PDM yet
Draft R2010 to be replaced by new code in PDM
PCB: Testpad for 1A
Testpad for charger cal.
Use R2007 tills we get R2010
Place near DMTXD traces
Place near DPRXD traces
USB_CTRL_CMI(8:0)
I2C_CMT(1:0)
CHARGER
PUSL(7:0)
USB_ACI(7:0)
BTB_USB(4:0)
EX-VBUS
N2000
SMB235ET-1063
4341739
N2001
TPS61073DDCR
4348551
N2002
ISP1302UK
4346975
N2003
TK63733BCBG
4342511
R2007
EMIF02-USB01F2


X2060
1
GND
Traceability pad

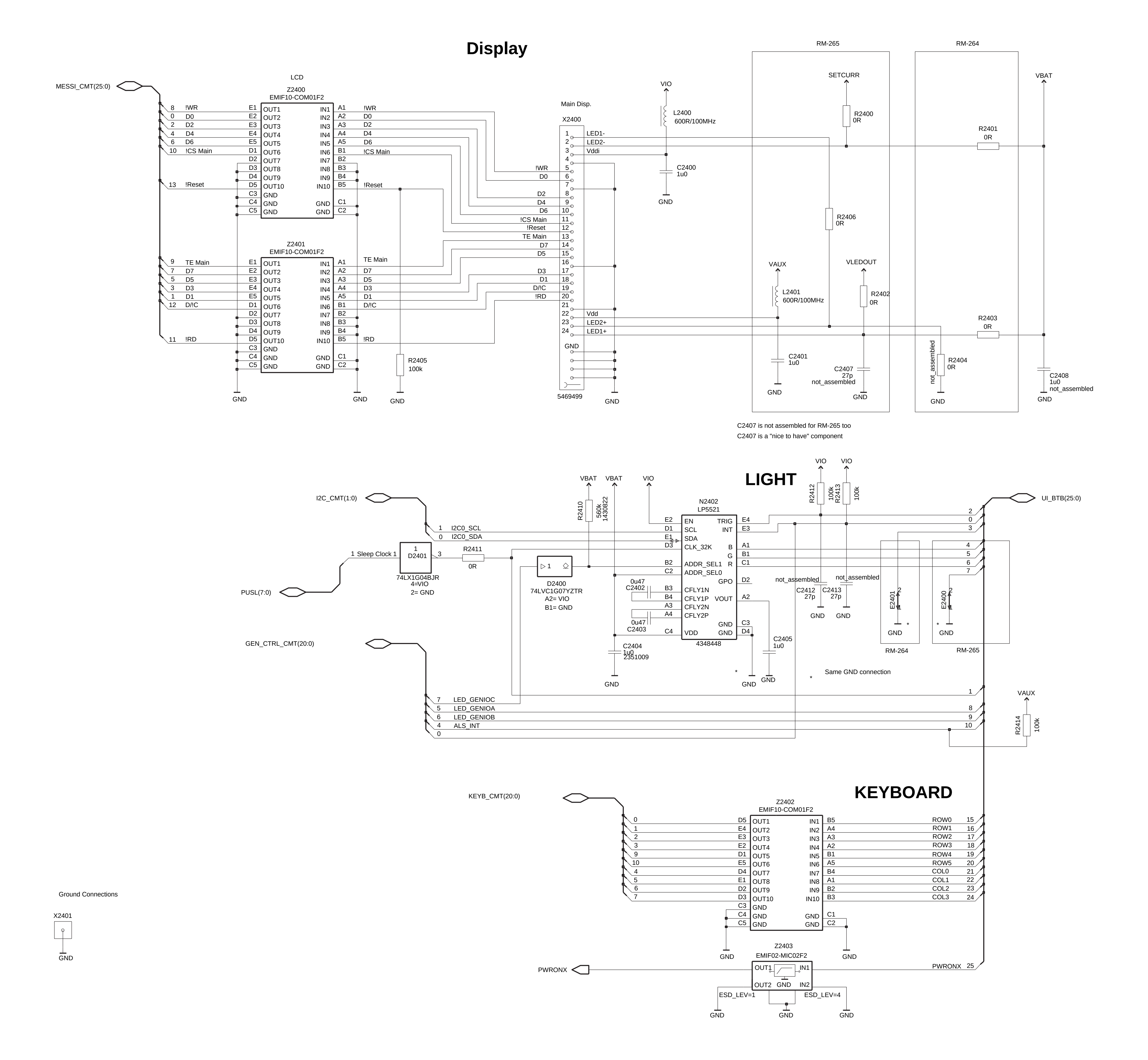

BB5.0 have defined 7-pin test pad pattern
USB_ACI(7:0)
RXD2
2
RXD
1
CLK
3
TXD
0
R2061
10R
R2062
10R
R2063
10R
R2064
10R
J2060
4
8
3
7
2
6
1
GND
VPP
R2065
10R
EX-VBUS
R2066
14V/50V
GND
C3
C1
A3
A1
ESDA14V2-4BF2
R2060
GND
B2
GND
Denied for new Designs !

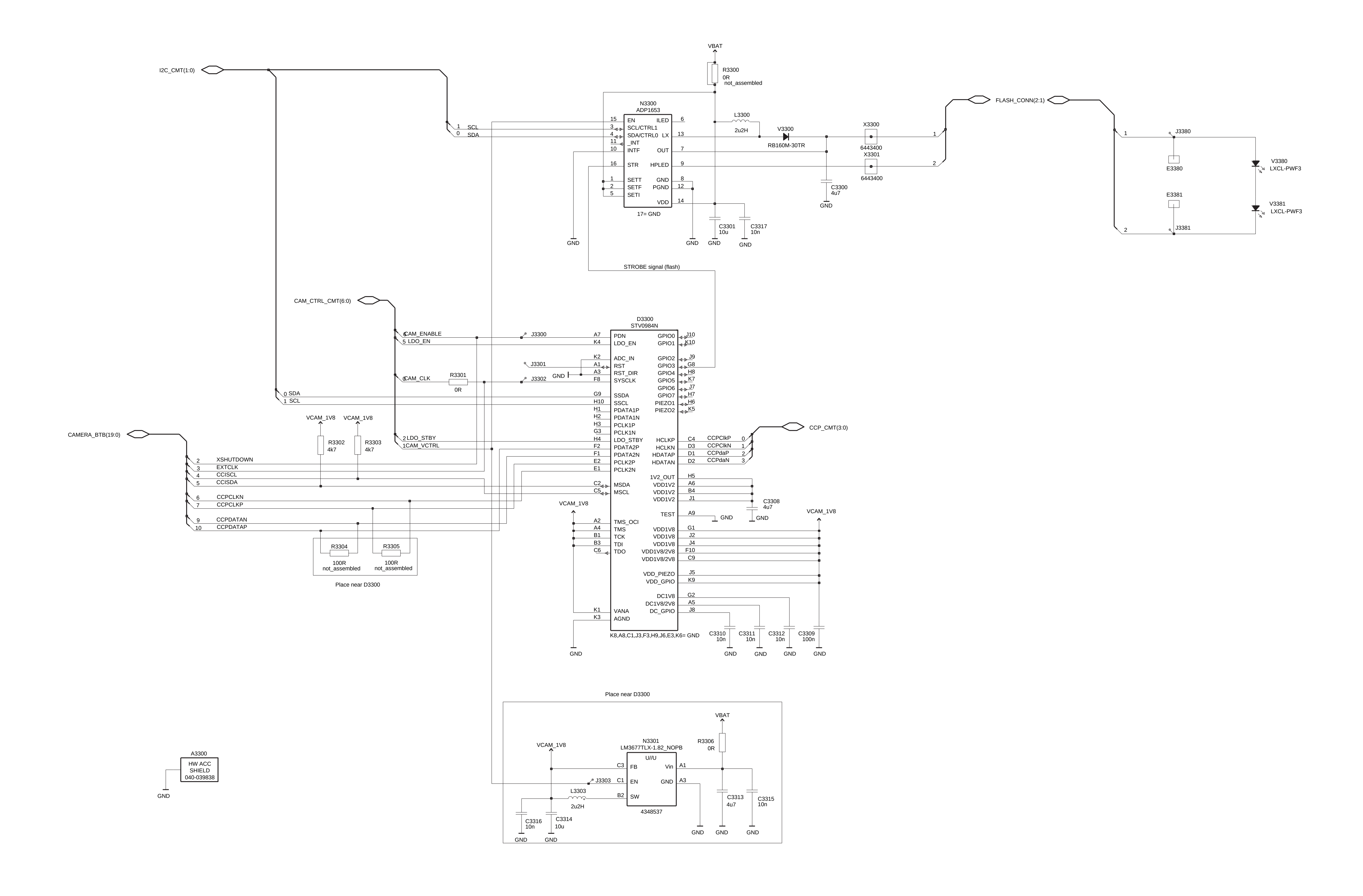
Battery interface

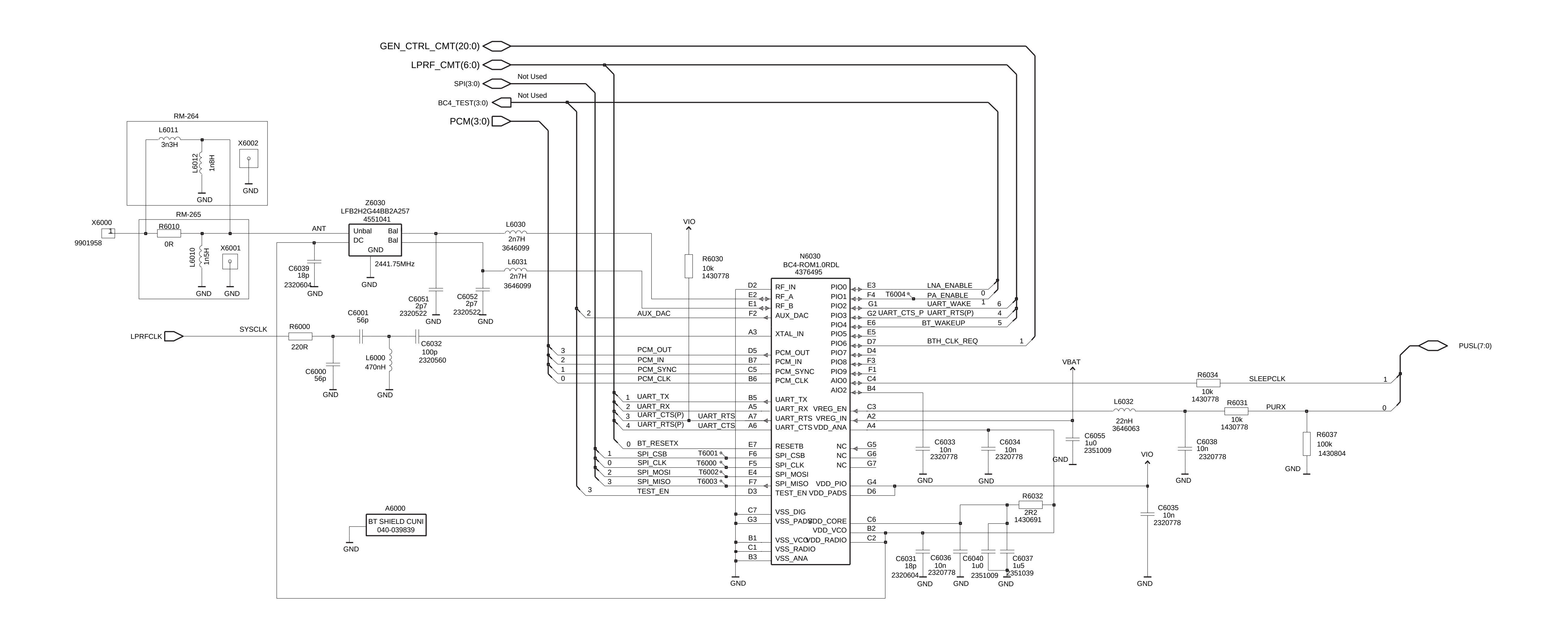


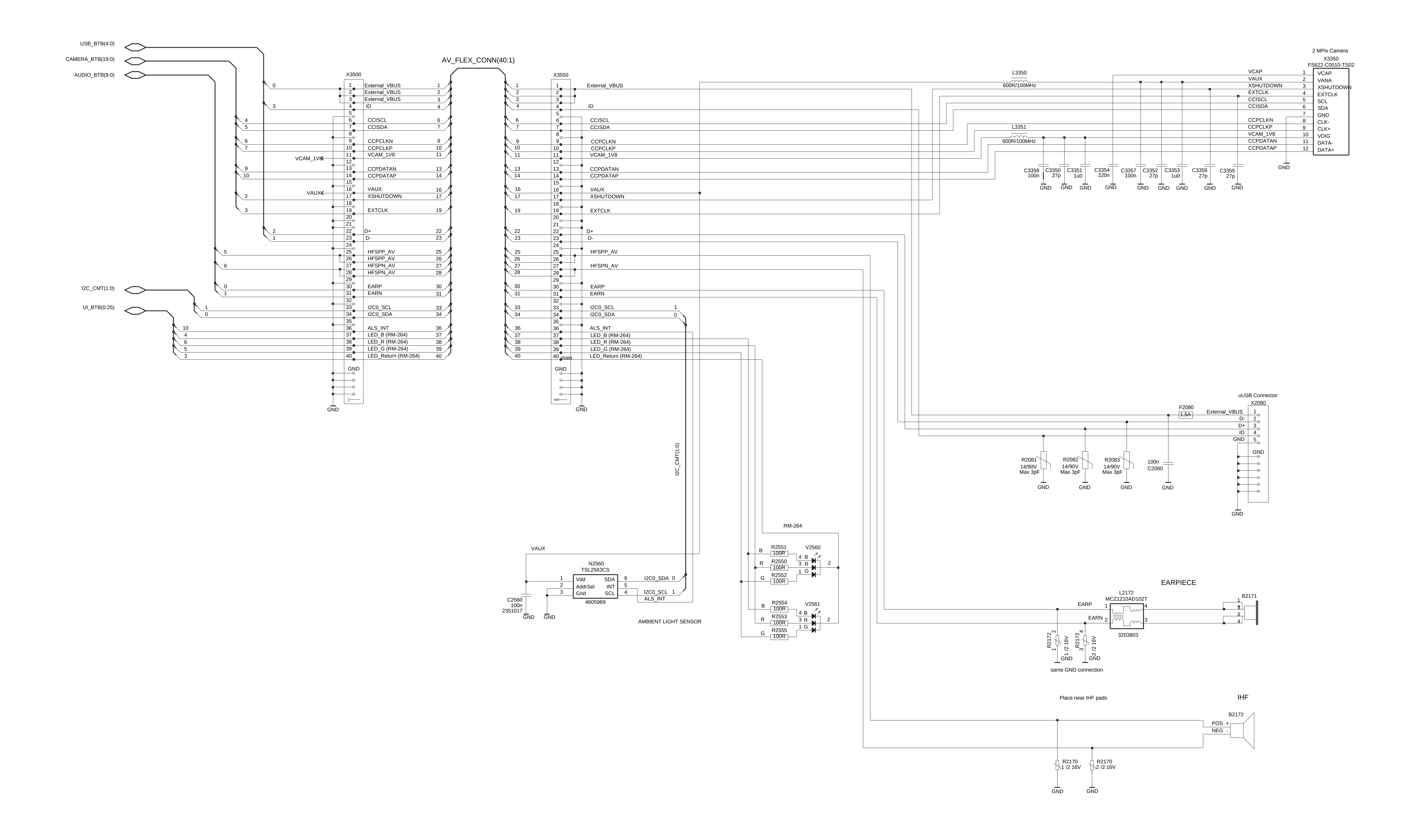


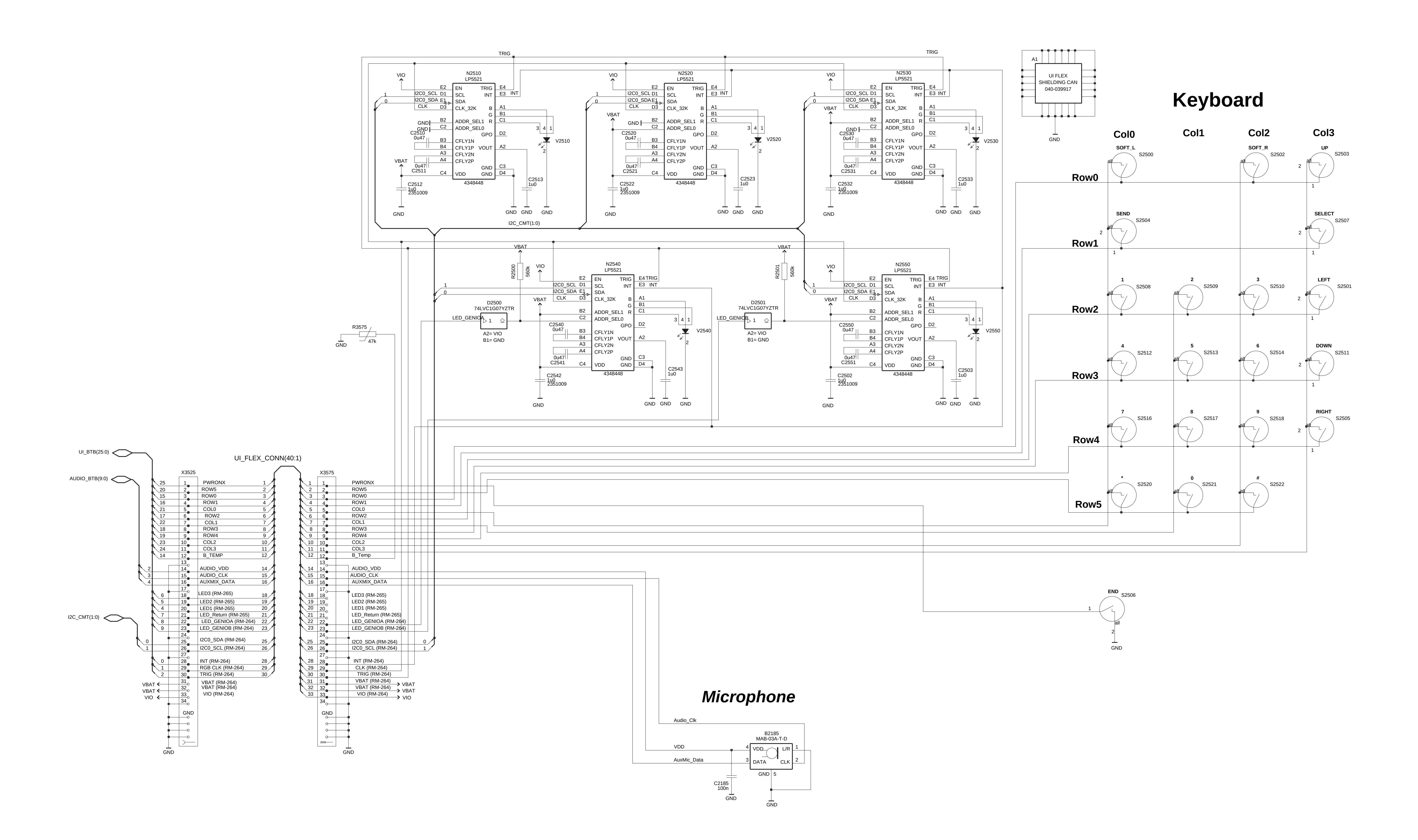
Headset
XAUDIO(5:0)
Mic2N
Mic2P
XearL
XearLC
J2110
J2111
J2112
J2113
R2112
R2113
5.6V/15V/0.05J
GND
Earpiece
AUDIO(6:0)
EARP
EARN
AUDIO_BTB(9:0)
Microphone
GEN_CTRL_CMT(20:0)
DIG_AUDIO(5:0)
DMIC_En
AudioClk
AuxMicData
R2101
0R
C2110
27p
not_assembled
L2109
220R/100MHz
C2109
100n
R2102
EMIF03-SIM02F2
SIM Reader Side
R2103
1k0
L2110
R2104
VDD
Audio_Clk
AuxMic_Data
Vibra
H_BRIDGE(3:0)
VIBRAP
VIBRAN
L2107
L2108
C2100
27p
C2101
C2102
1n0
2320744
X2100
X2101
6443403
IHF
HFSPP
HFSPN
L2102
L2101
C2106
C2107
HFSPP_AV
HFSPN_AV


Display
LIGHT
KEYBOARD
MESSI_CMT(25:0)
LCD
Z2400
EMIF10-COM01F2
Z2401
EMIF10-COM01F2
Main Disp.
X2400
5469499
L2400
600R/100MHz
C2400
1u0
RM-265
RM-264
SETCURR
VLEDOUT
VAUX
VBAT
VIO
GND
C2407 is not assembled for RM-265 too
C2407 is a "nice to have" component
I2C_CMT(1:0)
PUSL(7:0)
GEN_CTRL_CMT(20:0)
UI_BTB(25:0)
N2402
LP5521
4348448
D2401
74LX1G04BJR
D2400
74LVC1G07YZTR
Same GND connection
KEYB_CMT(20:0)
Z2402
EMIF10-COM01F2
Z2403
EMIF02-MIC02F2
PWRONX
ESD_LEV=1
ESD_LEV=4
Ground Connections
X2401

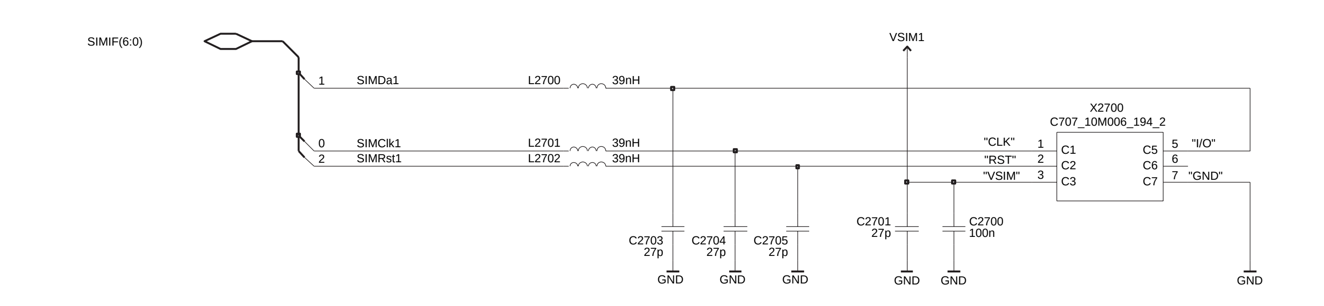






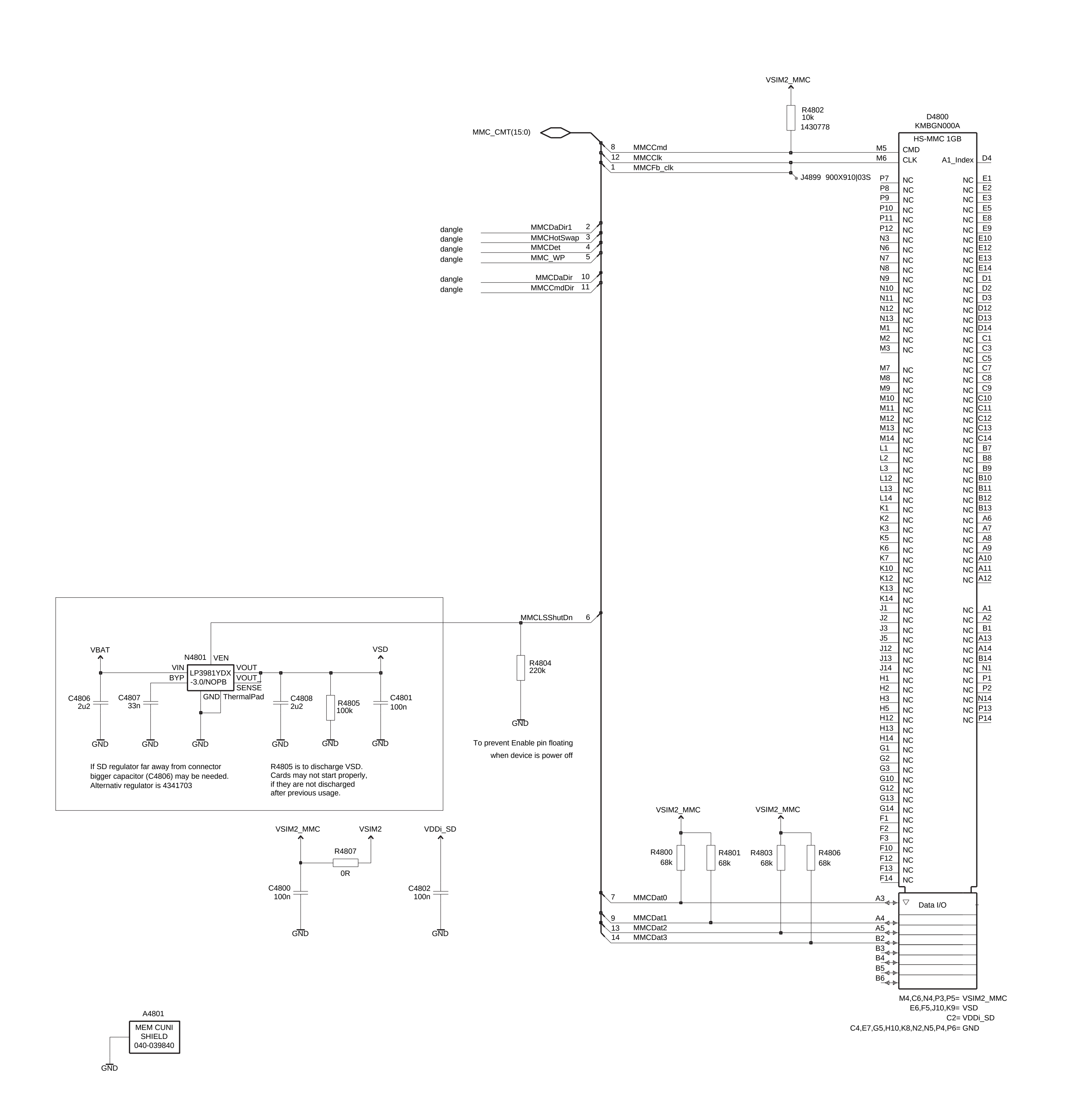


Keyboard
Col0
Col1
Col2
Col3
Row0
Row1
Row2
Row3
Row4
Row5
SOFT_L
SOFT_R
UP
SEND
SELECT
LEFT
DOWN
RIGHT
END
Microphone
UI_FLEX_CONN(40:1)
UI_BTB(25:0)
AUDIO_BTB(9:0)
I2C_CMT(1:0)
X3525
X3575
N2510
N2520
N2530
N2540
N2550
LP5521
D2500
D2501
74LVC1G07YZTR
B2185
MAB-03A-T-D
UI FLEX
SHIELDING CAN
040-039917

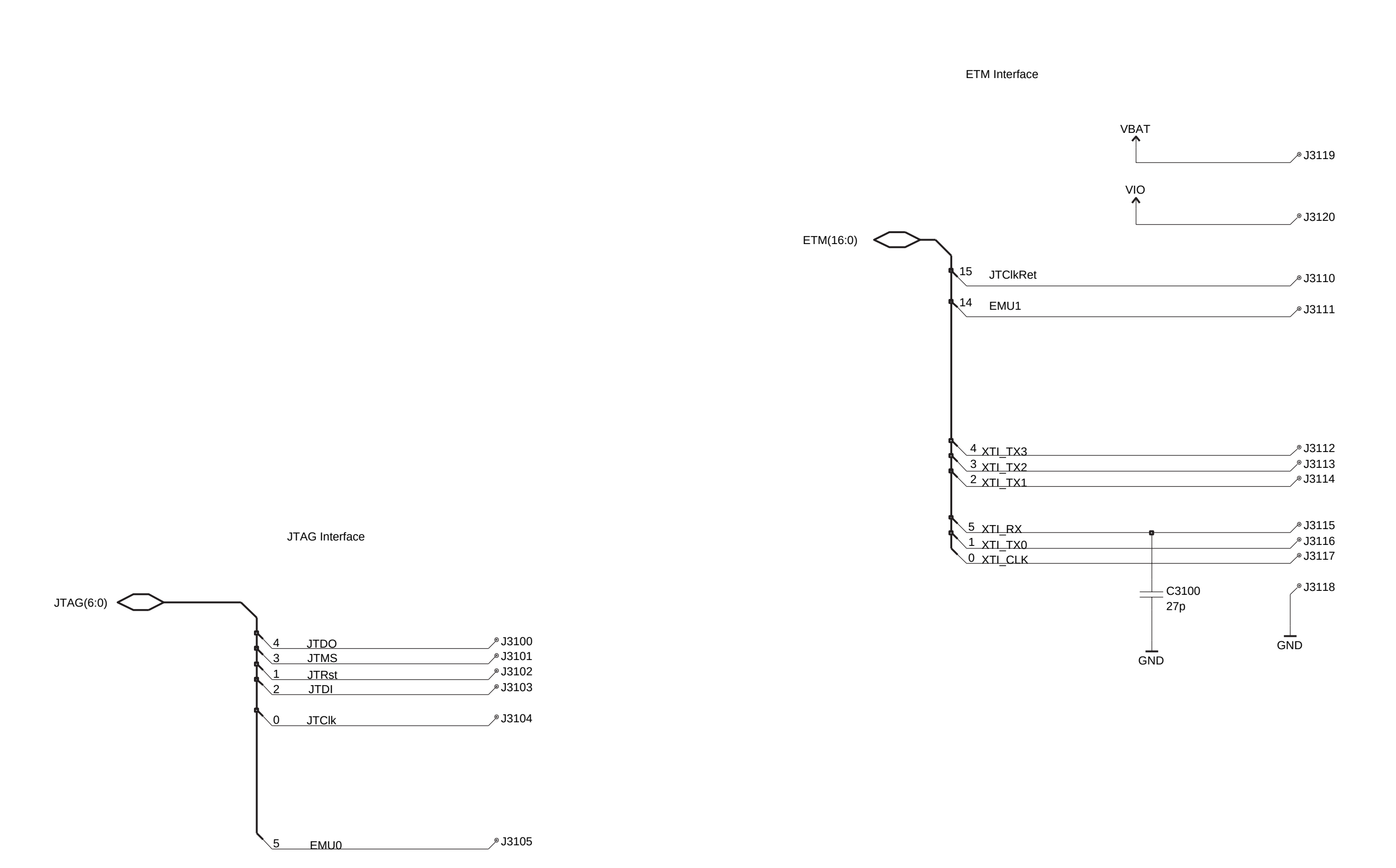


SIM BRACE

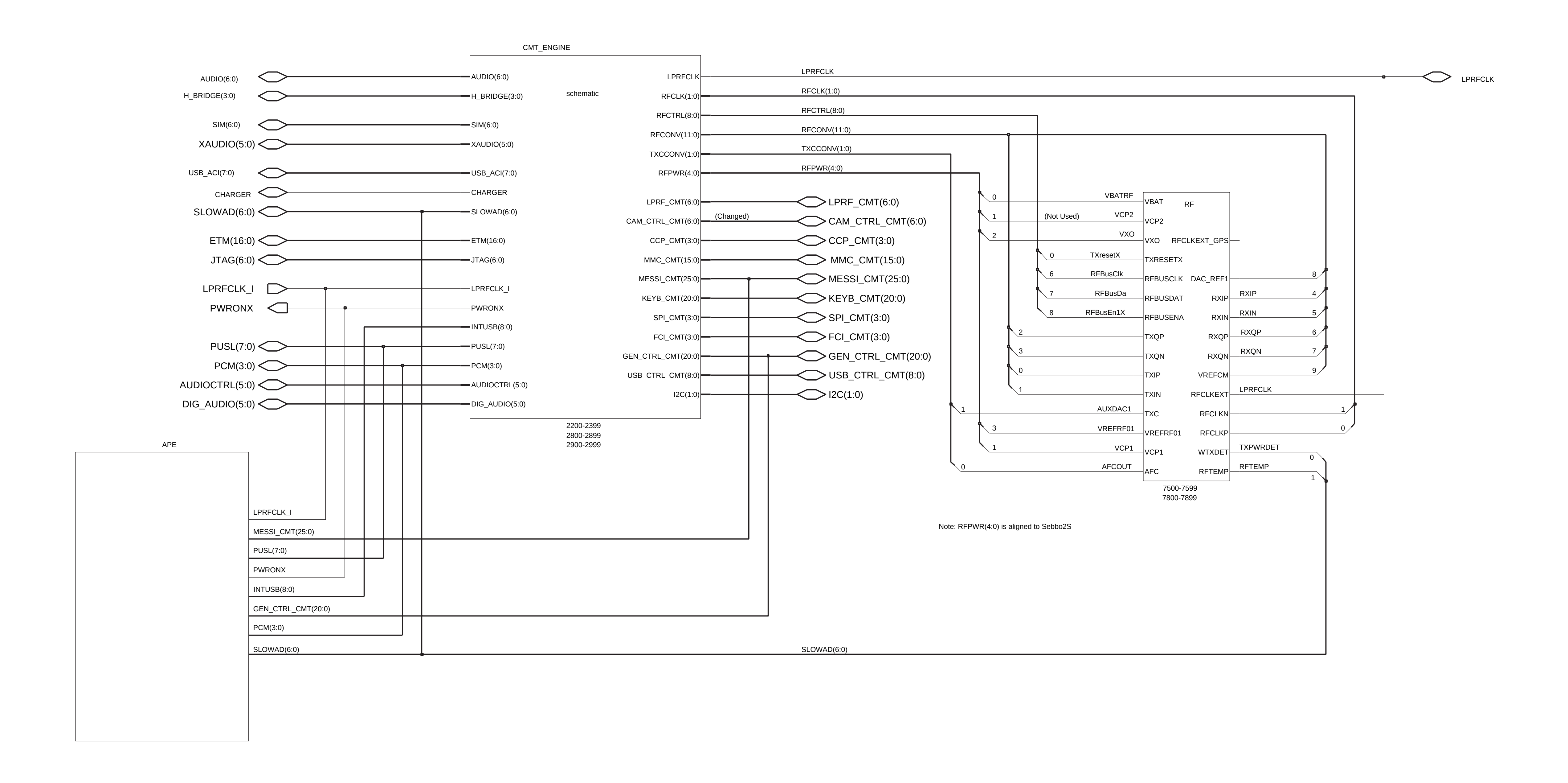
E2700
1
2
GND GND



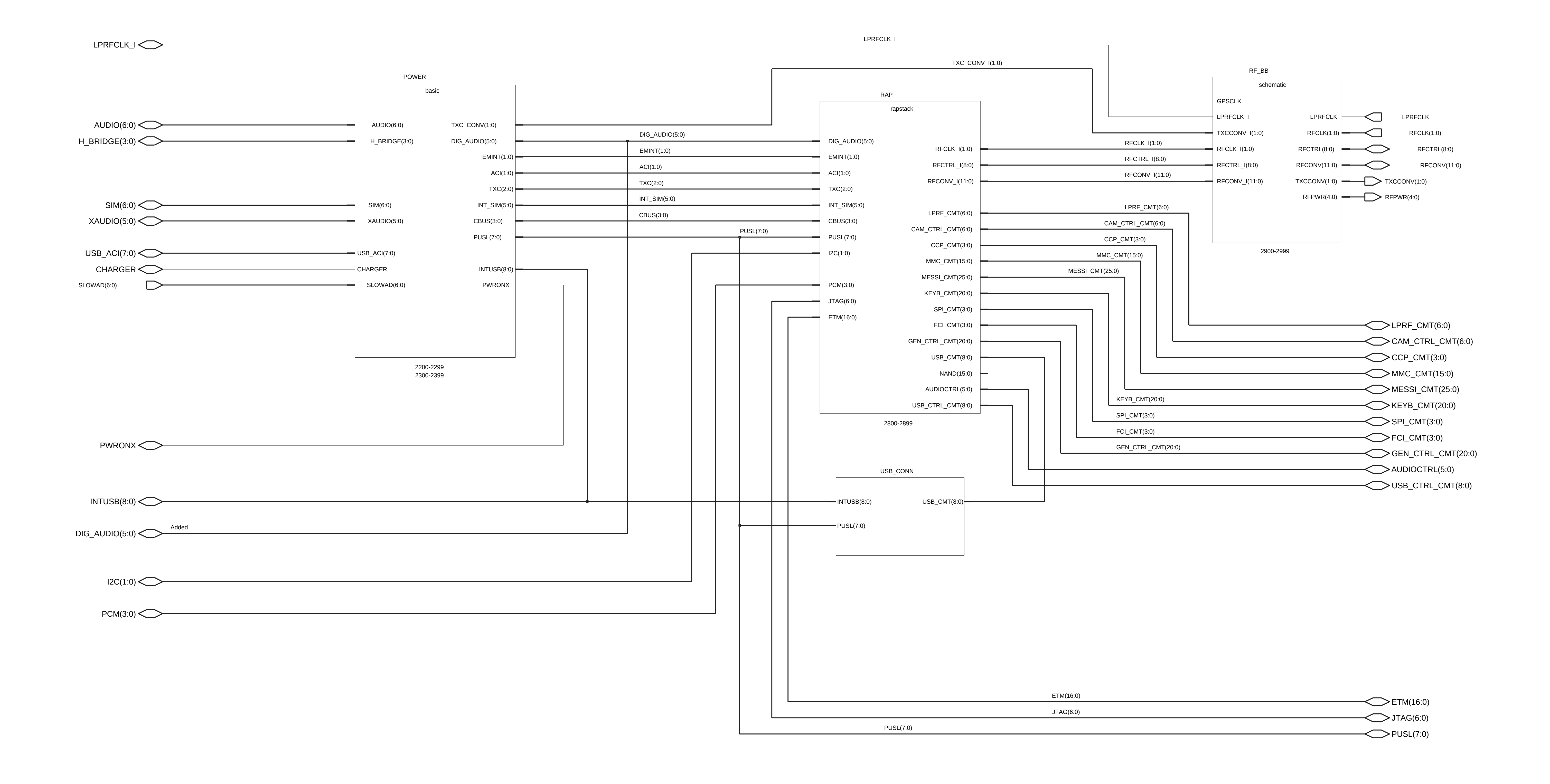
MMC_CMT(15:0)
VSIM2_MMC
R4802
10k
1430778
D4800
KMBGN000A
HS-MMC 1GB
8 MMCCmd M5 CMD
12 MMCClk M6 CLK
1 MMCFb_clk
A1_Index D4
J4899 900X910|03S
dangle MMCDaDir1 2
dangle MMCHotSwap 3
dangle MMCDet 4
dangle MMC_WP 5
dangle MMCDaDir 10
dangle MMCCmdDir 11
MMCLSShutDn 6
VBAT
N4801
VEN
VIN
BYP
LP3981YDX
-3.0/NOPB
VOUT
VOUT_
SENSE
GND ThermalPad
VSD
C4806
2u2
C4807
33n
C4808
2u2
R4805
100k
C4801
100n
R4804
220k
GND
To prevent Enable pin floating
when device is power off
If SD regulator far away from connector
bigger capacitor (C4806) may be needed.
Alternativ regulator is 4341703
R4805 is to discharge VSD.
Cards may not start properly,
if they are not discharged
after previous usage.
VSIM2_MMC
VSIM2
R4807
0R
C4800
100n
VDDi_SD
C4802
100n
VSIM2_MMC
R4800
68k
R4801
68k
R4803
68k
R4806
68k
7 MMCDat0 A3
9 MMCDat1 A4
13 MMCDat2 A5
14 MMCDat3 B2
B3
B4
B5
B6
Data I/O
M4,C6,N4,P3,P5= VSIM2_MMC
E6,F5,J10,K9= VSD
C2= VDDi_SD
C4,E7,G5,H10,K8,N2,N5,P4,P6= GND
A4801
MEM CUNI
SHIELD
040-039840



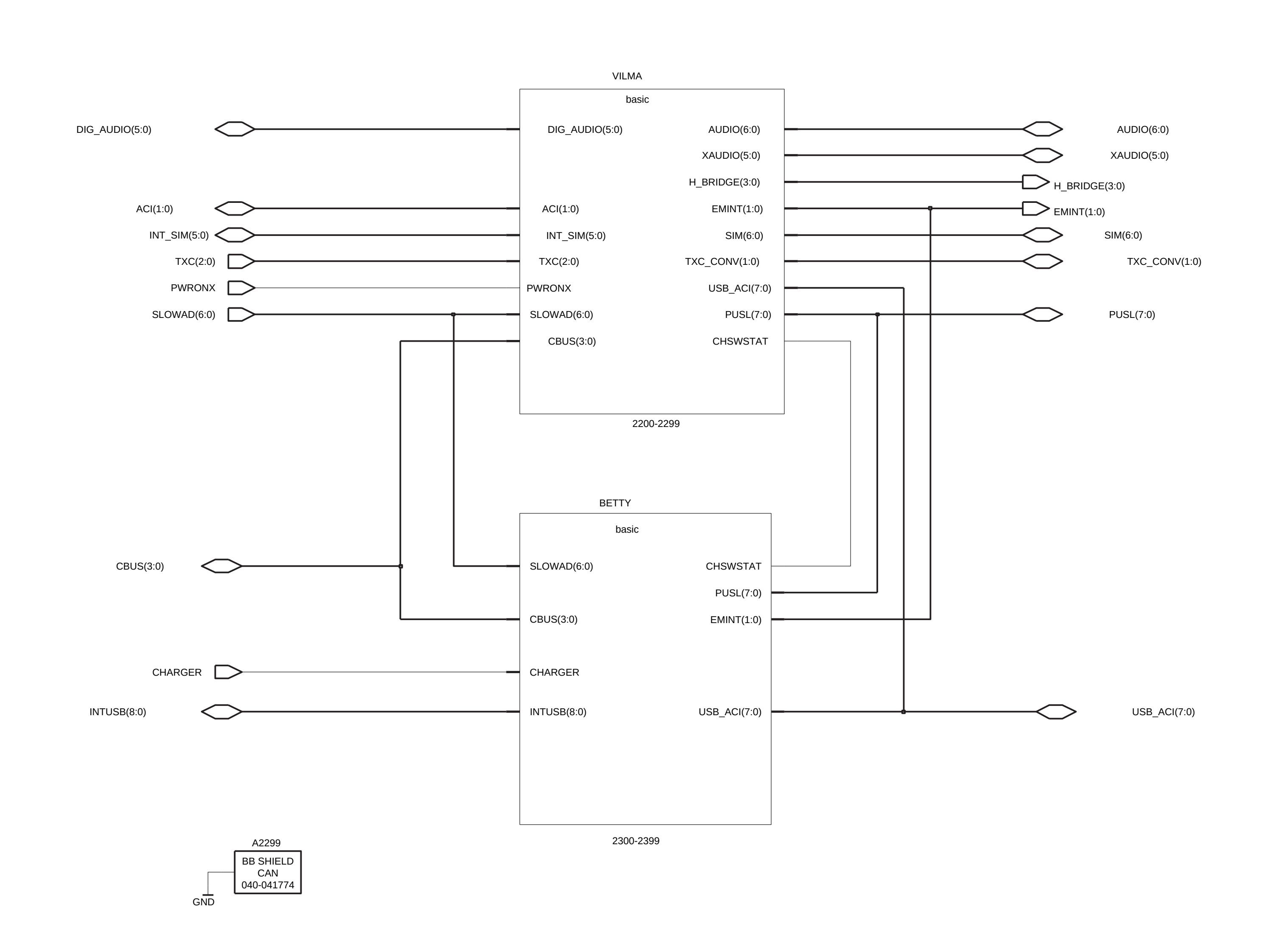
ETM Interface
VBAT
J3119
VIO
J3120
ETM(16:0)
15
JTClkRet
J3110
14
EMU1
J3111
4
XTI_TX3
J3112
3
XTI_TX2
J3113
2
XTI_TX1
J3114
5
XTI_RX
J3115
1
XTI_TX0
J3116
0
XTI_CLK
J3117
J3118
C3100
27p
GND
GND
JTAG Interface
JTAG(6:0)
4
JTDO
J3100
3
JTMS
J3101
1
JTRst
J3102
2
JTDI
J3103
0
JTClk
J3104
5
EMU0
J3105

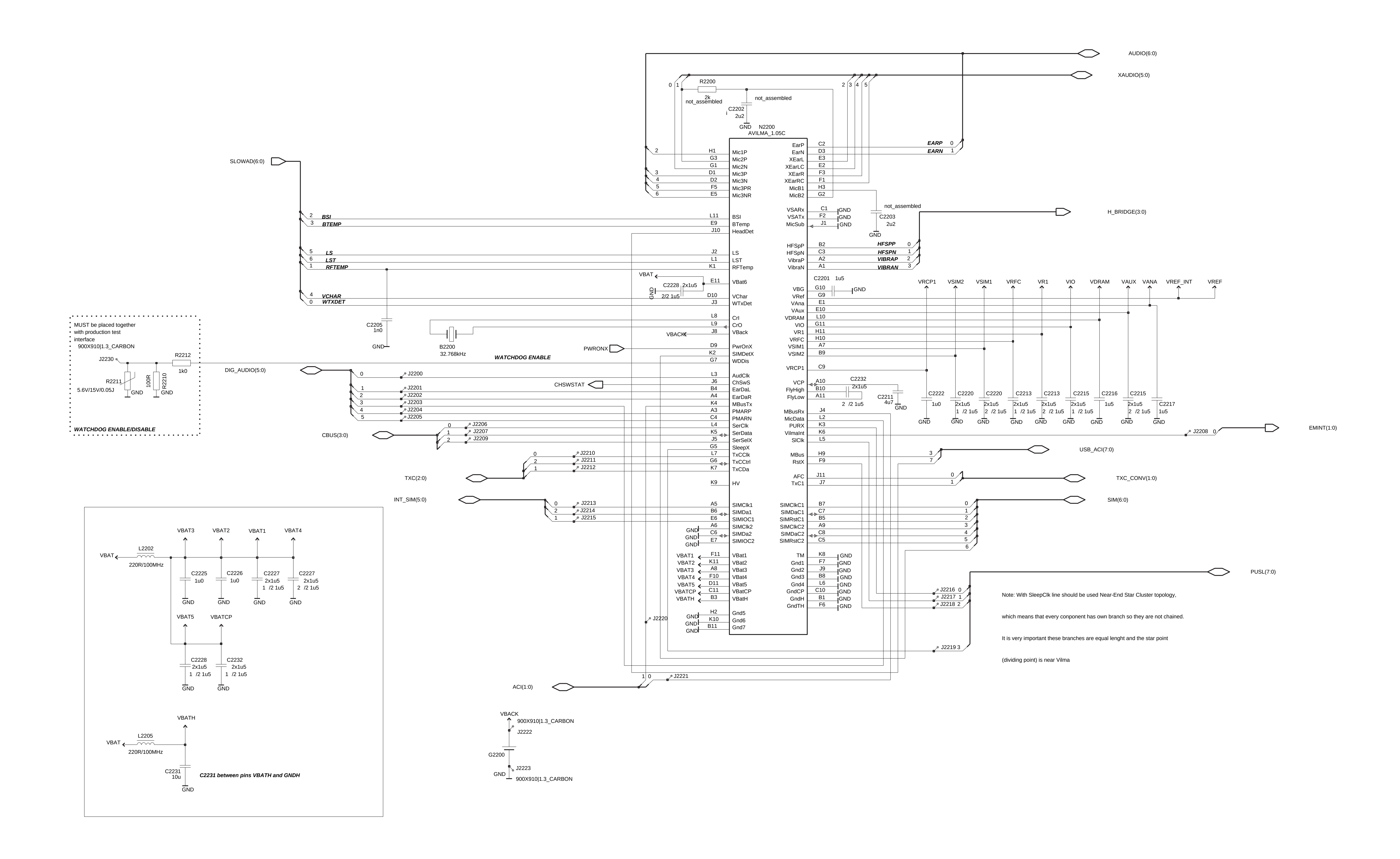


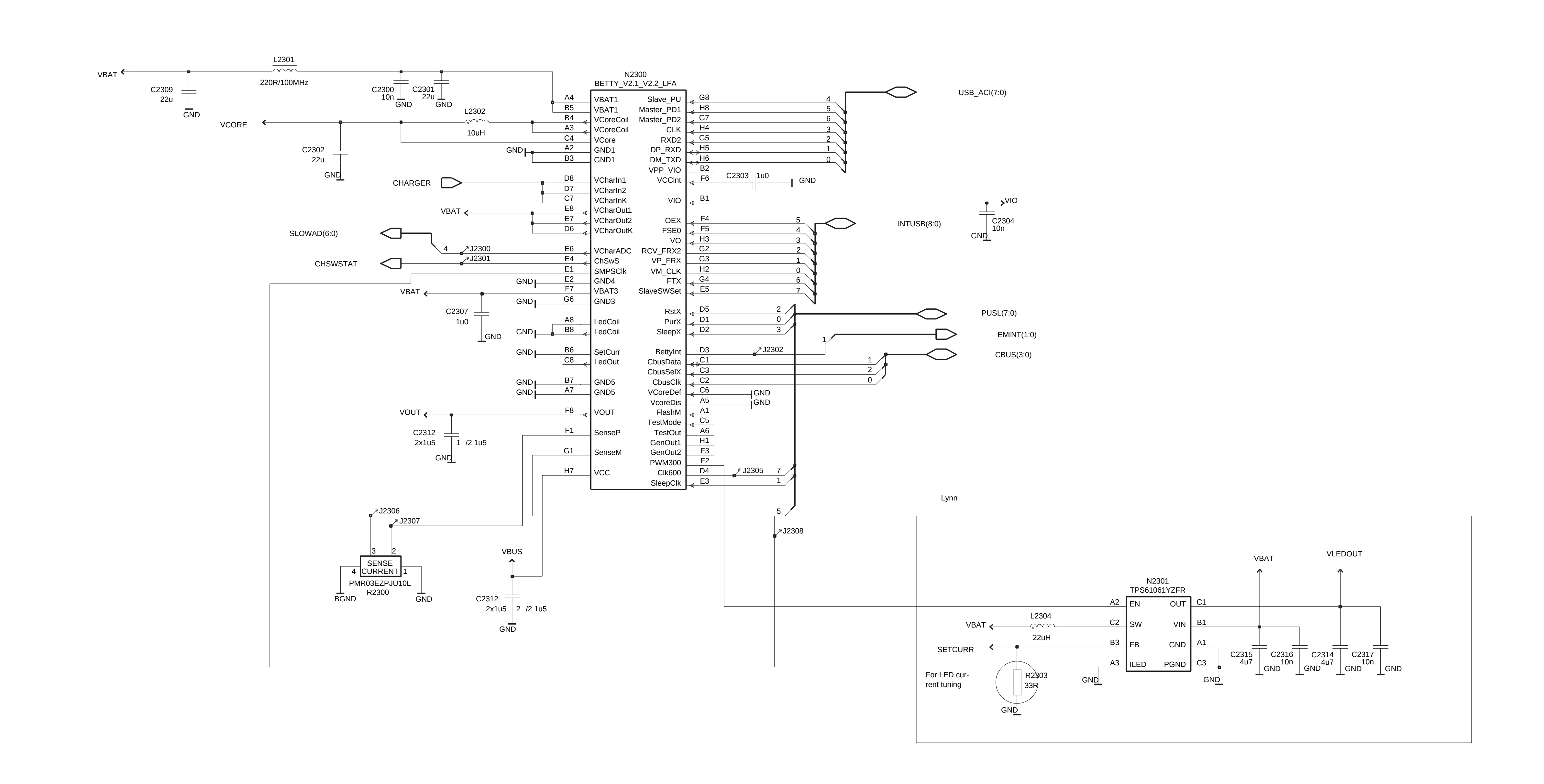
CMT_ENGINE
schematic
AUDIO(6:0)
H_BRIDGE(3:0)
SIM(6:0)
XAUDIO(5:0)
USB_ACI(7:0)
CHARGER
SLOWAD(6:0)
ETM(16:0)
JTAG(6:0)
LPRFCLK_I
PWRONX
INTUSB(8:0)
PUSL(7:0)
PCM(3:0)
AUDIOCTRL(5:0)
DIG_AUDIO(5:0)
LPRFCLK
RFCLK(1:0)
RFCTRL(8:0)
RFCONV(11:0)
TXCCONV(1:0)
RFPWR(4:0)
LPRF_CMT(6:0)
CAM_CTRL_CMT(6:0)
(Changed)
CCP_CMT(3:0)
MMC_CMT(15:0)
MESSI_CMT(25:0)
KEYB_CMT(20:0)
SPI_CMT(3:0)
FCI_CMT(3:0)
GEN_CTRL_CMT(20:0)
USB_CTRL_CMT(8:0)
I2C(1:0)
2200-2399
2800-2899
2900-2999
APE
SLOWAD(6:0)
RF
VBATRF
VBAT
VCP2
(Not Used)
VXO
RFCLKEXT_GPS
TXresetX
TXRESETX
RFBusClk
RFBUSCLK
RFBusDa
RFBUSDAT
RFBusEn1X
RFBUSENA
DAC_REF1
RXIP
RXIN
RXQP
RXQN
VREFCM
RFCLKEXT
TXQP
TXQN
TXIP
TXIN
AUXDAC1
TXC
RFCLKN
VREFRF01
RFCLKP
VCP1
WTXDET
TXPWRDET
AFCOUT
AFC
RFTEMP
7500-7599
7800-7899
Note: RFPWR(4:0) is aligned to Sebbo2S



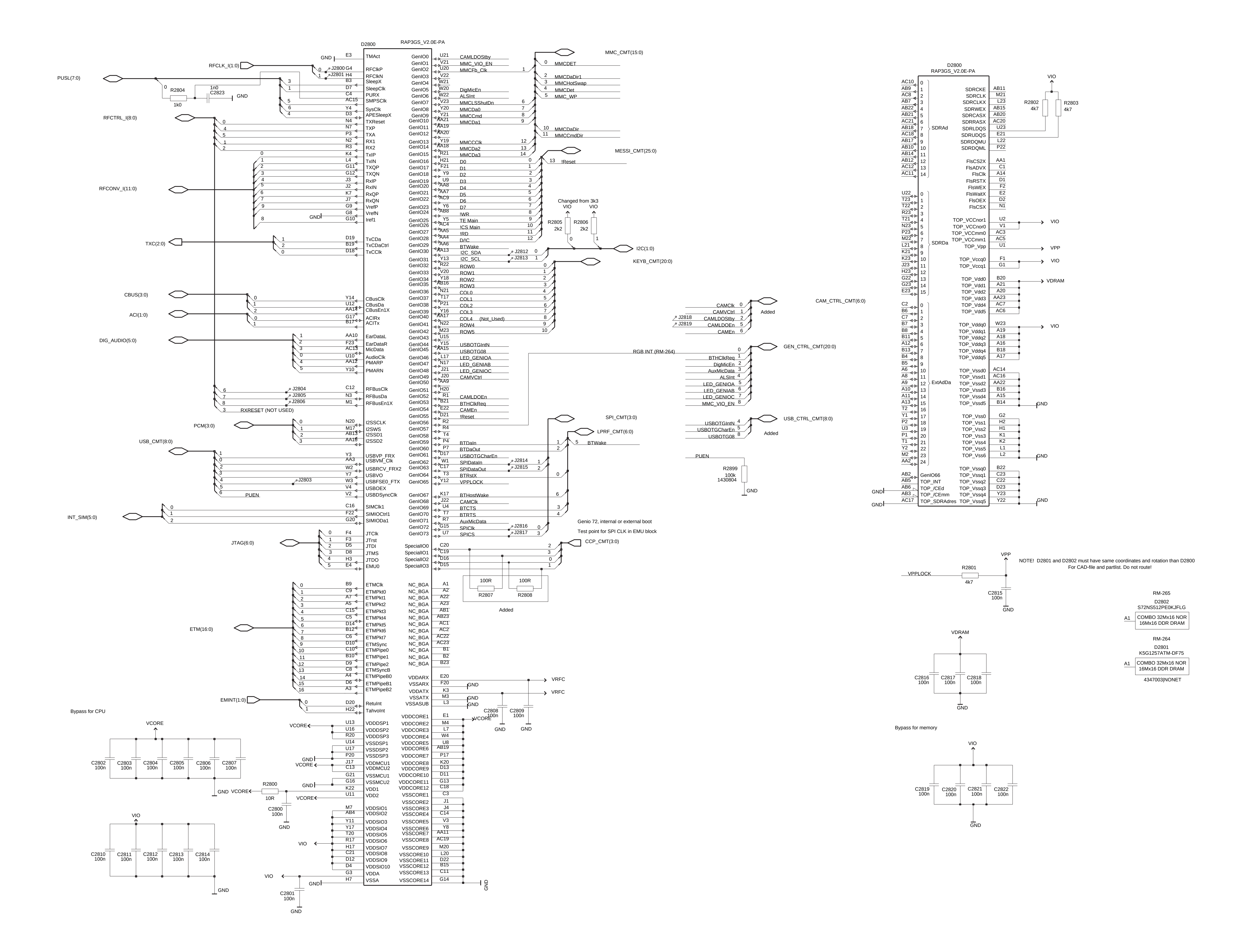
LPRFCLK_I
AUDIO(6:0)
H_BRIDGE(3:0)
SIM(6:0)
XAUDIO(5:0)
USB_ACI(7:0)
CHARGER
SLOWAD(6:0)
PWRONX
INTUSB(8:0)
DIG_AUDIO(5:0)
Added
I2C(1:0)
PCM(3:0)
POWER
basic
2200-2299
2300-2399
RAP
rapstack
2800-2999
RF_BB
schematic
2900-2999
USB_CONN
TXC_CONV_I(1:0)
LPRF_CMT(6:0)
CAM_CTRL_CMT(6:0)
CCP_CMT(3:0)
MMC_CMT(15:0)
MESSI_CMT(25:0)
KEYB_CMT(20:0)
SPI_CMT(3:0)
FCI_CMT(3:0)
GEN_CTRL_CMT(20:0)
AUDIOCTRL(5:0)
USB_CTRL_CMT(8:0)
ETM(16:0)
JTAG(6:0)
PUSL(7:0)

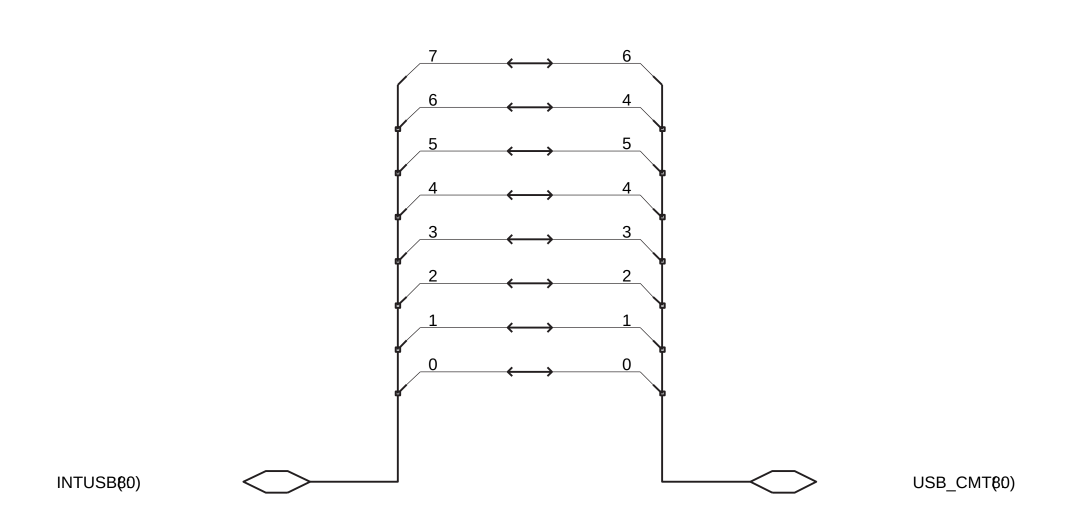

VILMA
basic
DIG_AUDIO(5:0)
DIG_AUDIO(5:0)
AUDIO(6:0)
AUDIO(6:0)
XAUDIO(5:0)
XAUDIO(5:0)
H_BRIDGE(3:0)
H_BRIDGE(3:0)
ACI(1:0)
ACI(1:0)
EMINT(1:0)
EMINT(1:0)
INT_SIM(5:0)
INT_SIM(5:0)
SIM(6:0)
SIM(6:0)
TXC(2:0)
TXC(2:0)
TXC_CONV(1:0)
TXC_CONV(1:0)
PWRONX
PWRONX
USB_ACI(7:0)
SLOWAD(6:0)
SLOWAD(6:0)
PUSL(7:0)
PUSL(7:0)
CBUS(3:0)
CHSWSTAT
2200-2299
BETTY
basic
CBUS(3:0)
SLOWAD(6:0)
CHSWSTAT
PUSL(7:0)
CBUS(3:0)
EMINT(1:0)
CHARGER
CHARGER
INTUSB(8:0)
INTUSB(8:0)
USB_ACI(7:0)
USB_ACI(7:0)
2300-2399
A2299
BB SHIELD
CAN
040-041774
GND

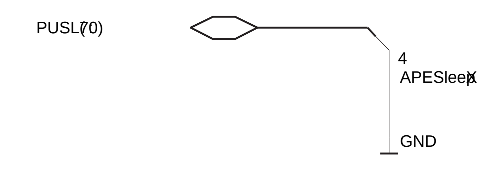

AUDIO(6:0)
XAUDIO(5:0)
R2200
2k
not_assembled
C2202
2u2
not_assembled
GND
N2200
AVILMA_1.05C
SLOWAD(6:0)
BSI
BTEMP
LS
LST
RFTEMP
VCHAR
WTXDET
H_BRIDGE(3:0)
EARP
EARN
HFSPP
HFSPN
VIBRAP
VIBRAN
C2203
2u2
C2201 1u5
VBAT
C2228 2x1u5
MUST be placed together
with production test
interface
900X910|1.3_CARBON
J2230
R2212
1k0
R2211
5.6V/15V/0.05J
R2210
100R
GND
WATCHDOG ENABLE/DISABLE
DIG_AUDIO(5:0)
C2205
1n0
B2200
32.768kHz
VBACK
PWRONX
WATCHDOG ENABLE
CHSWSTAT
CBUS(3:0)
TXC(2:0)
INT_SIM(5:0)
VRCP1
VSIM2
VSIM1
VRFC
VR1
VIO
VDRAM
VAUX
VANA
VREF_INT
VREF
C2232
2x1u5
C2211
4u7
C2222
1u0
C2220
2x1u5
C2213
2x1u5
C2215
2x1u5
C2216
1u5
C2217
1u5
EMINT(1:0)
J2208
USB_ACI(7:0)
TXC_CONV(1:0)
SIM(6:0)
PUSL(7:0)
J2216
J2217
J2218
J2219
J2220
J2221
ACI(1:0)
Note: With SleepClk line should be used Near-End Star Cluster topology,
which means that every component has own branch so they are not chained.
It is very important these branches are equal lenght and the star point
(dividing point) is near Vilma
VBAT3
VBAT2
VBAT1
VBAT4
L2202
220R/100MHz
VBAT
C2225
1u0
C2226
1u0
C2227
2x1u5
VBAT5
VBATCP
C2228
2x1u5
C2232
2x1u5
VBATH
L2205
220R/100MHz
C2231
10u
C2231 between pins VBATH and GNDH
VBACK
900X910|1.3_CARBON
J2222
G2200
J2223
900X910|1.3_CARBON

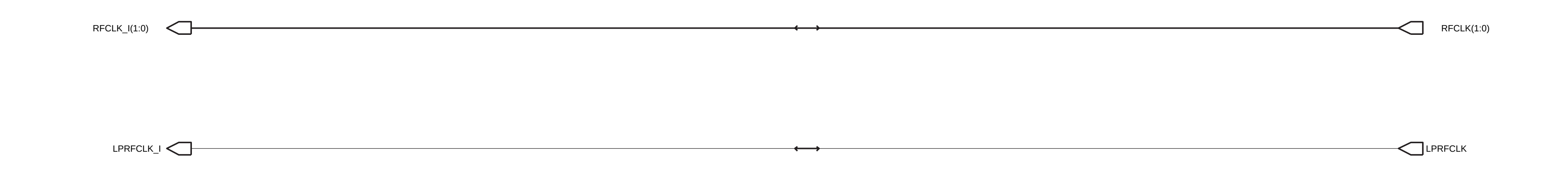


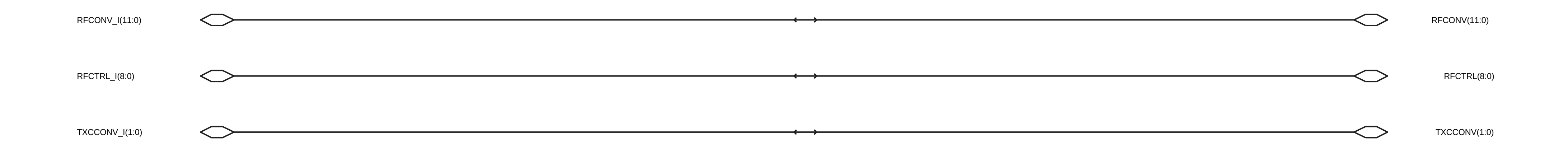
N2300
BETTY_V2.1_V2.2_LFA
VBAT
VCORE
CHARGER
SLOWAD(6:0)
CHSWSTAT
VOUT
VBUS
USB_AO(7:0)
INTUSB(6:0)
PUSL(7:0)
EMINT(1:0)
CBUS(3:0)
VIO
Lynn
N2301
TPS61061YZFR
VBAT
VLEDOUT
SETCURR
For LED current tuning

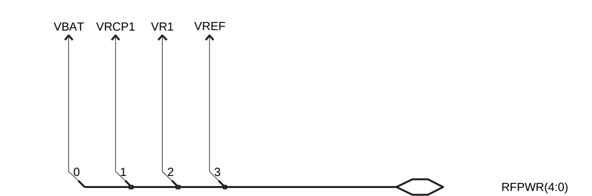


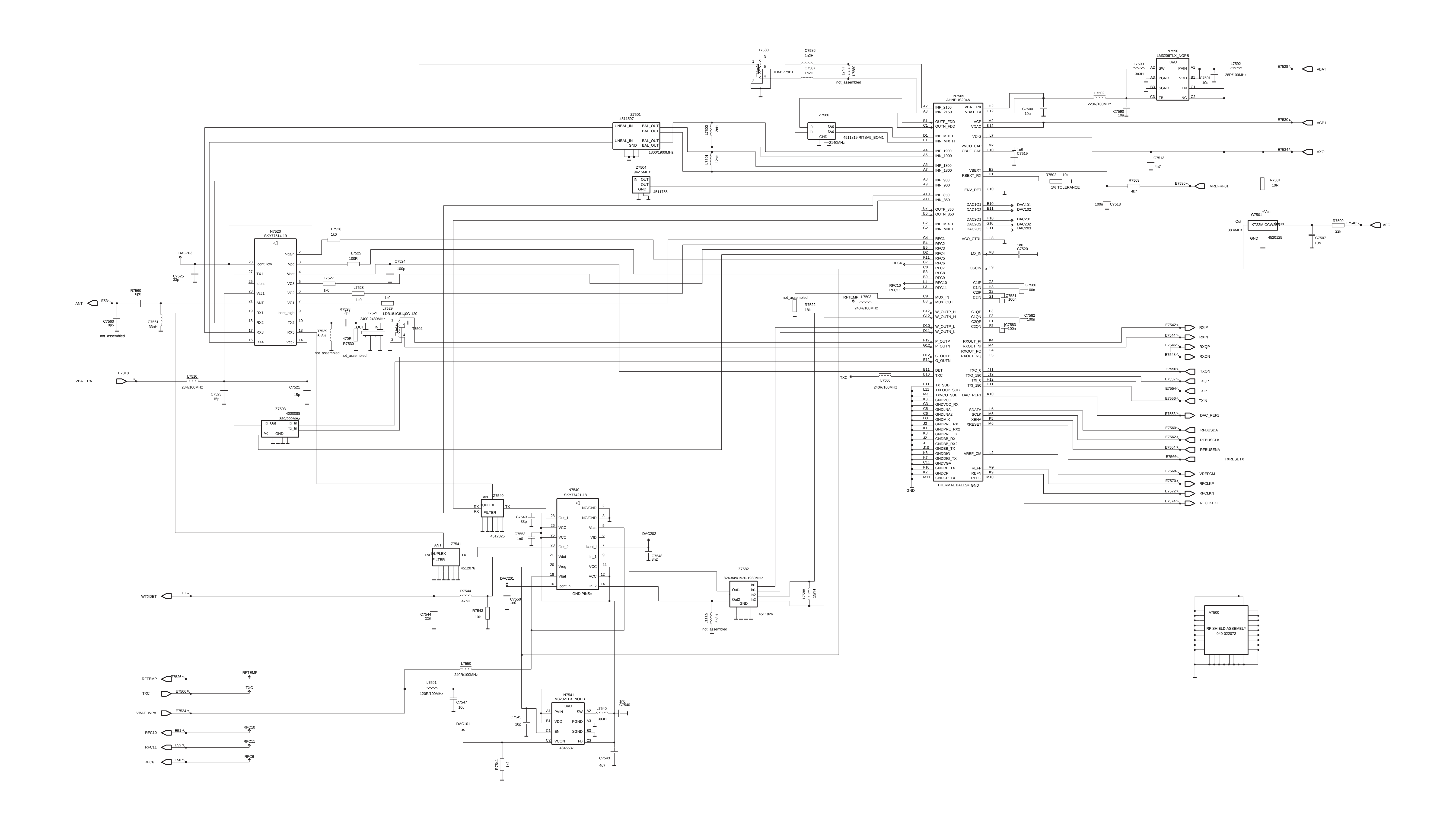

7
6
6
4
5
5
4
4
3
3
2
2
1
1
0
0
INTUSB(0)
USB_CMT(0)

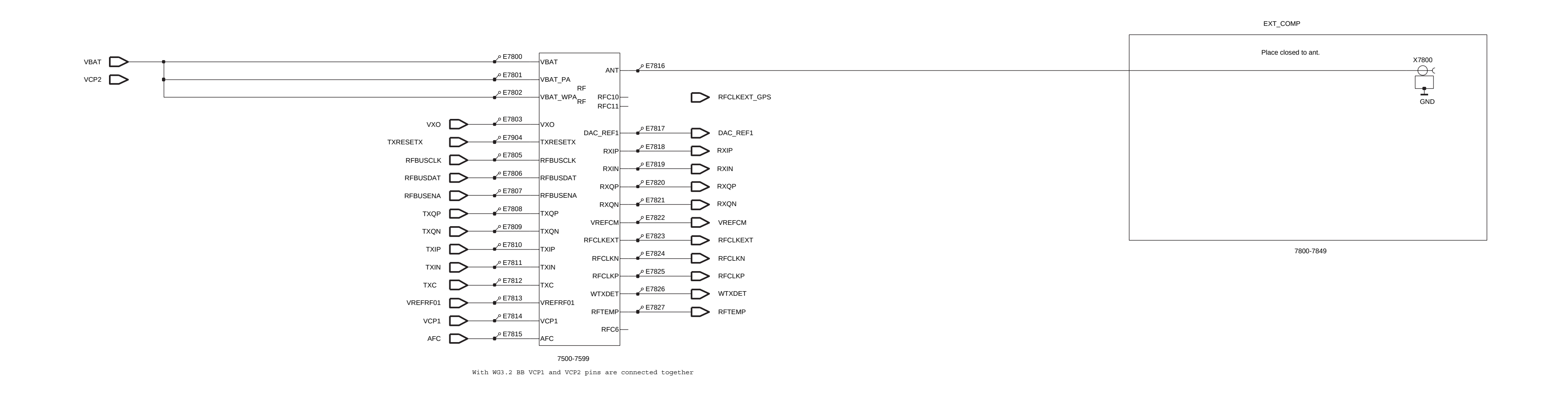

PUSL(0)
4
APESleep
GND

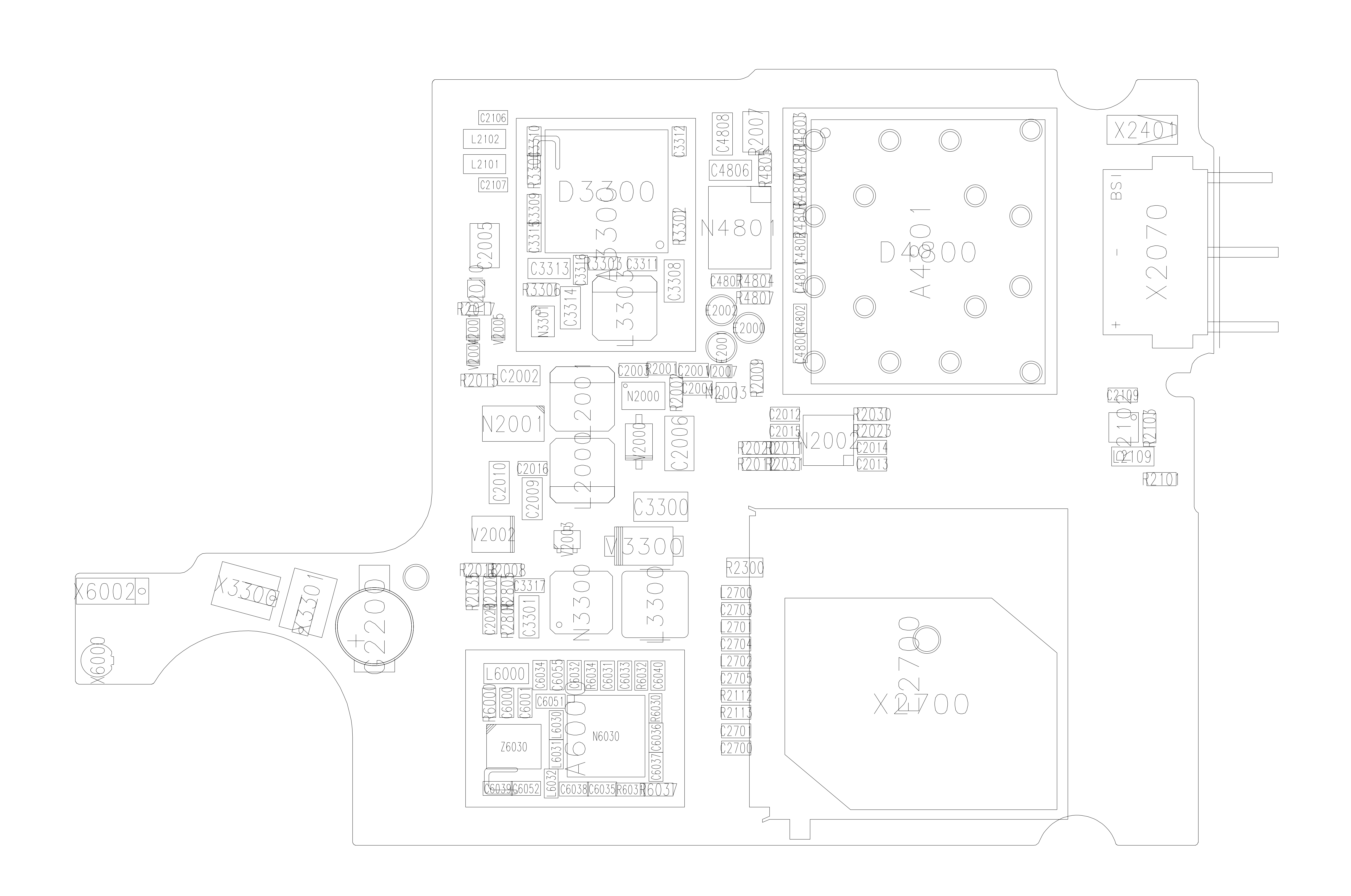

RFCLK_I(1:0)
RFCLK(1:0)
LPRFCLK_I
LPRFCLK

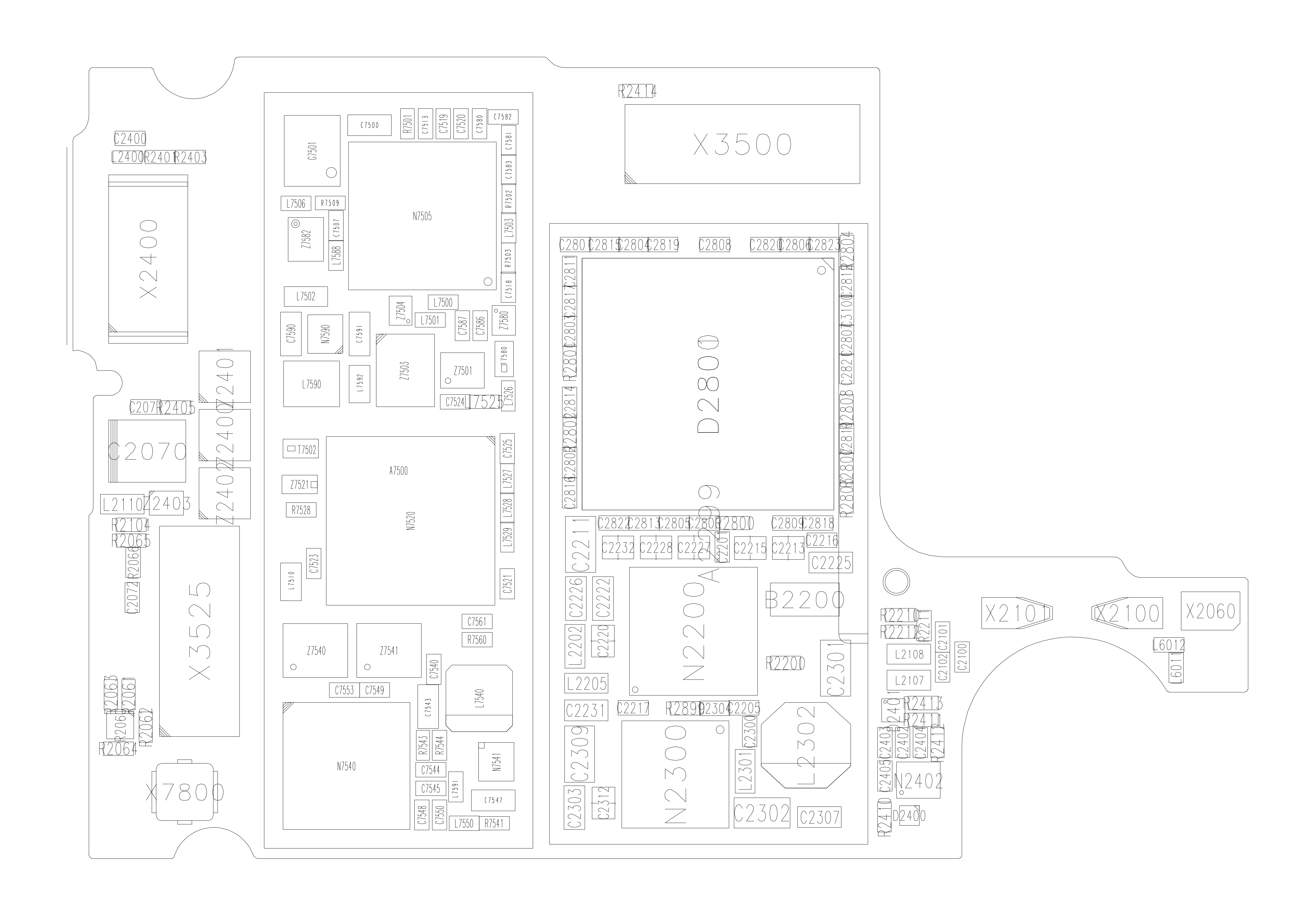

RFCONV_I(11:0)
RFCONV(11:0)
RFCTRL_I(8:0)
RFCTRL(8:0)
TXCCONV_I(1:0)
TXCCONV(1:0)


VBAT
VRCP1
VR1
VREF
0
1
2
3
RFPWR(4:0)




VBAT
VCP2
E7800
E7801
E7802
VBAT
VBAT_PA
VBAT_WPA
RF
RF
VXO
TXRESETX
RFBUSCLK
RFBUSDAT
RFBUSENA
TXQP
TXQN
TXIP
TXIN
TXC
VREFRF01
VCP1
AFC
E7803
E7904
E7805
E7806
E7807
E7808
E7809
E7810
E7811
E7812
E7813
E7814
E7815
ANT
E7816
RFC10
RFC11
RFCLKEXT_GPS
DAC_REF1
RXIP
RXIN
RXQP
RXQN
VREFCM
RFCLKEXT
RFCLKN
RFCLKP
WTXDET
RFTEMP
RFC6
E7817
E7818
E7819
E7820
E7821
E7822
E7823
E7824
E7825
E7826
E7827
7500-7599
With WG3.2 BB VCP1 and VCP2 pins are connected together
EXT_COMP
Place closed to ant.
X7800
GND
7800-7849





R2414
X3500
C2400
R2401
R2403
X2400
C2070
R2405
Z2401
Z2400
Z2402
L2110
Z2403
R2104
R2065
X3525
X7800
N7505
A7500
N7520
N7540
D2800
N2200
B2200
R2200
C2301
L2302
N2300
C2302
C2307
C2303
C2309
C2231
L2205
L2202
C2226
C2222
C2211
C2225
C2216
C2215
C2213
C2232
C2228
C2227
C2217
C2305
C2808
C2819
C2801
C2823
X2101
X2100
X2060
L2108
L2107
L6012
N2402
D2400